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IS 4281 (1967): Scissors, McIndoe's, for Plastic Surgery  
[MHD 1: Surgical Instruments]



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“Knowledge is such a treasure which cannot be stolen”



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IS : 4281 - 1967

# *Indian Standard*

## SPECIFICATION FOR SCISSORS, McINDOE'S, FOR PLASTIC SURGERY

UDC 615.472.4



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**INDIAN STANDARDS INSTITUTION**  
**MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG**  
**NEW DELHI 1**

*December 1967*

# *Indian Standard*

## SPECIFICATION FOR SCISSORS, McINDOE'S, FOR PLASTIC SURGERY

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*( Continued from page 1 )*

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# *Indian Standard*

## SPECIFICATION FOR SCISSORS, McINDOE'S, FOR PLASTIC SURGERY

### 0. FOREWORD

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 21 September 1967, after the draft finalized by the Surgical Instruments Sectional Committee had been approved by the Consumer Products Division Council.

**0.2** The formulation of Indian Standards on surgical instruments has been taken up on the recommendations of the Advisory Committee for Development of Surgical Instruments, Equipment and Appliances of the Government of India.

**0.3** This Indian Standard is one of a series on surgical instruments. Other standards published so far in the series appear on page 10.

**0.4** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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### 1. SCOPE

**1.1** This standard covers the requirements for the following McIndoe's scissors for plastic surgery:

- a) Dissecting, triangular blades, blunt points, straight, and curved on flat;
- b) Straight, fine sharp points; and
- c) Curved on flat.

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\*Rules for rounding off numerical values ( revised ).

## 2. MATERIALS

**2.1** Scissors shall be made of stainless steel conforming to Designation 30Cr13 of Schedule V of IS:1570-1961\* or to the following composition:

	<i>Percent</i>
Carbon	0.35 to 0.45
Silicon	0.10 to 0.70
Manganese	0.30 to 0.70
Nickel	1.00, <i>Max</i>
Chromium	12.00 to 14.00

**2.2** Screws shall be made of stainless steel either the same as used for the instrument or conforming to Designation 22Cr13S28 of Schedule V of IS : 1570-1961\*.

## 3. SHAPE AND DIMENSIONS

**3.1** Scissors shall conform generally to the shape and dimensions shown in Fig. 1, 2 and 3.

**3.2 Screw** — Screw used shall be a slotted cheese head pattern as shown in Fig. 4 on P 8. The profile of the screw thread shall conform to IS : 1362-1962†. The thread shall be of such length as to allow sufficient shank for proper bearing surface and to adequately secure component parts of the scissors. Screw shall retain proper position after setting without binding or loosening during use and shall be flush with the surface of the blades.

**3.3 Finger Loop** — Finger loop shall be properly shaped and the size shall conform to Size No. 2 of 12 of Section 5 of IS : 3642-1966‡.

## 4. WORKMANSHIP AND FINISH

**4.1** Scissors shall be symmetrical and well-balanced.

**4.2** The blades along their length and the tips shall coincide and shall not override, when the scissors are fully closed.

**4.3** The blades shall open and close without stiffness and shall have a slight crossover action to give a continuous pinch and shall have no play at the joints.

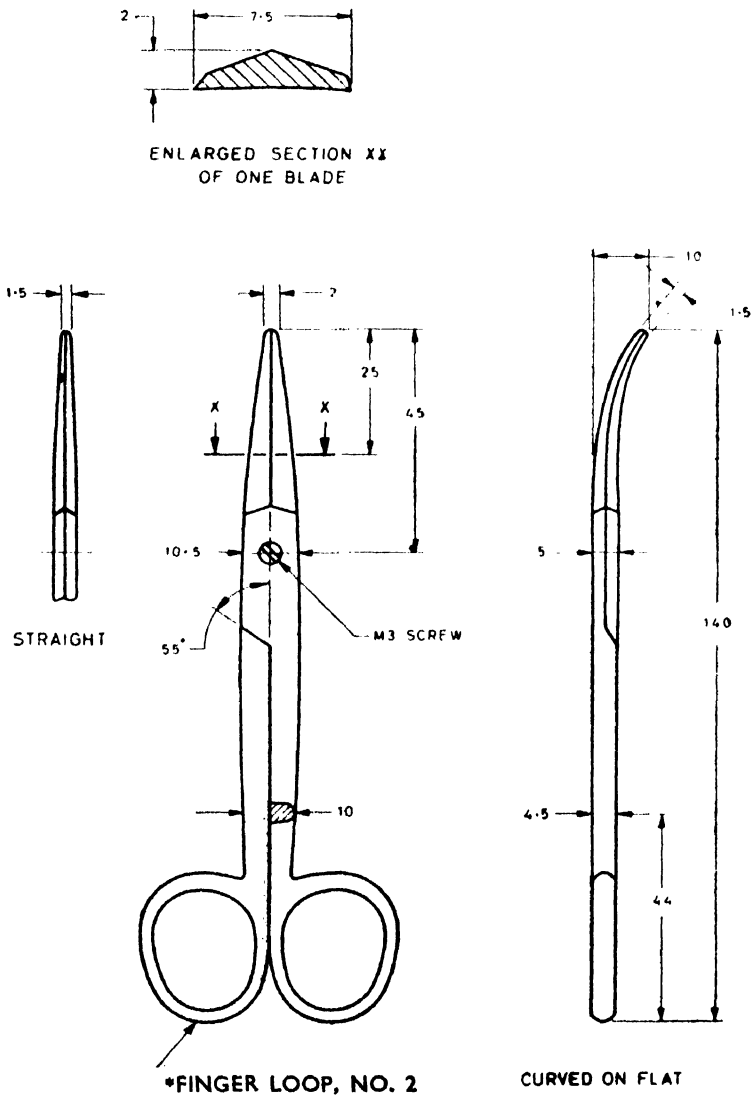
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\*Schedules for wrought steels for general engineering purposes.

†Dimensions for screw threads for general purposes ( diameter range 1.6 to 39 mm )  
( revised ).

‡General requirements for surgical instruments.

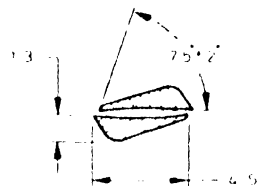




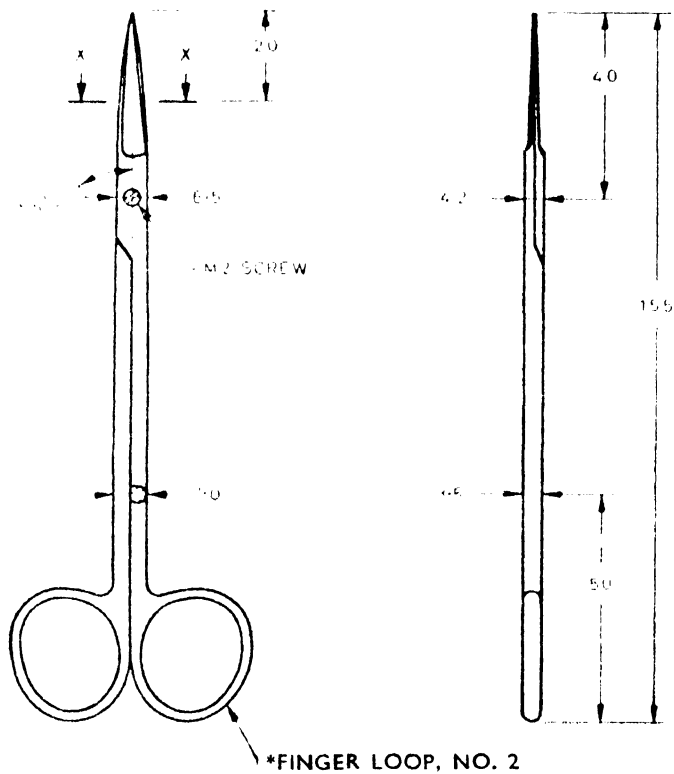
\*See IS : 3642-1966 'General requirements for surgical instruments'.

All dimensions in millimetres.

FIG. 1 DISSECTING SCISSORS, BLUNT POINT, TRIANGULAR BLADE, STRAIGHT AND CURVED ON FLAT, MCINDOE'S PATTERN



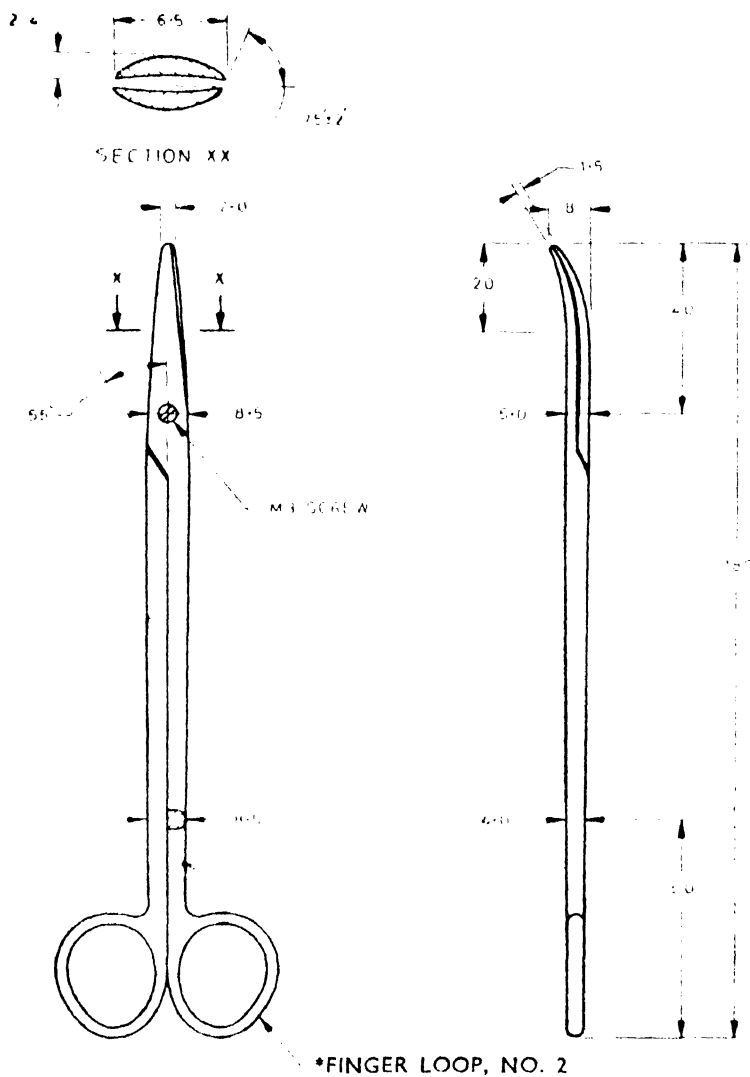
SECTION XX



\*See IS : 3612-1966 'General requirements for surgical instruments'.

All dimensions in millimetres.

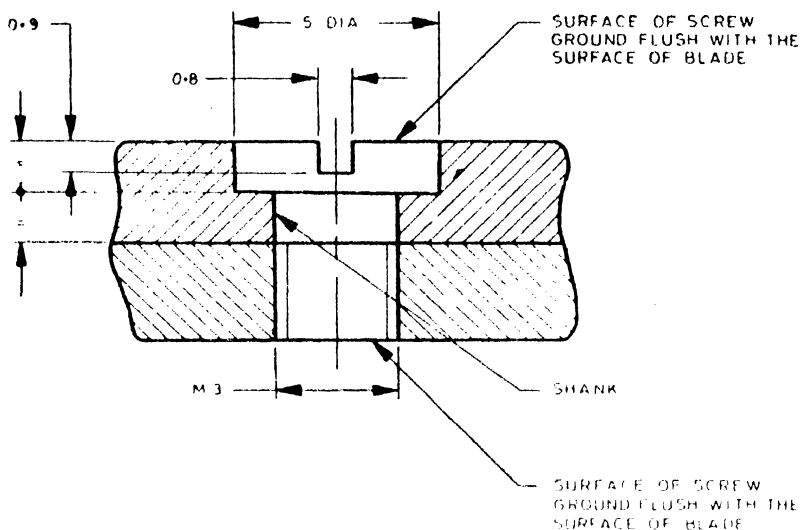
FIG. 2 SCISSORS, FINE SHARP POINT, STRAIGHT, McINDOE'S PATTERN



\*See IS : 3642-1966 'General requirements for surgical instruments'.

All dimensions in millimetres.

FIG. 3 SCISSORS, CURVED ON FLAT, MCINDOE'S PATTERN



All dimensions in millimetres.

FIG. 4 DETAILS OF SCREW ASSEMBLY

**4.4** Scissors shall be free from cracks, seams, burrs, flaws and other defects. The surfaces of the scissors shall be passivated and finished smooth and bright. The edges shall be even and rounded except for the cutting edge which shall be sharp. The cutting edge shall not have any feather.

## 5. HARDNESS

**5.1** Scissors shall be evenly hardened and tempered to 550 to 600 *HV*.

## 6. TESTS

**6.1 Performance** — The cutting edges from pinch to the tips shall cut wet tissue paper, teased-out cotton wool, fine hairs and frayed lint accurately and cleanly.

**6.2 Hardness** — When tested on a hardness testing machine, the scissors shall have a Vicker's diamond pyramid hardness number as specified in 5.1.

**6.3 Flexibility** — The flexibility shall be tested as given in 6.3.1 and 6.3.2.

**6.3.1** The finger loop of one arm of the scissors shall be fixed at its equator in a vice, with the shank and the blade projecting above the vice. By the application of force at a point 75 mm above the vice the shank shall be deflected at right angles to the plane of the finger loop to a distance of 10 mm as measured at the tip of the blade. On release of the force, no permanent set shall be observed.

**6.3.2** The test shall be repeated on the same arm with the arm fixed in the vice near the joint so that 75 mm of the shank (as measured from the upper surface of the vice jaws to the upper pole of the finger loop) protrudes above the vice. The deflecting force shall be applied at the upper pole of the finger loop and shall act in a plane at right angles to the plane of the finger loop. The shank shall be deflected by 5 mm as measured at the upper pole of the finger loop. On release of the force, no permanent set shall be observed.

**6.4 Corrosion Resistance Test** — The test for corrosion resistance shall be carried out as given in 6.4.1.

**6.4.1 Copper Sulphate Test** — The sample shall be scrubbed with soap and warm water, rinsed in hot water followed by a dip in ethyl alcohol (95 percent) and dried. The sample shall be completely immersed in copper sulphate solution at room temperature for six minutes and shall then be washed off with fresh water or wet cotton wool. The copper sulphate solution shall be made up as follows:

Copper sulphate ( $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ )	4.0 g
Sulphuric acid ( $\text{H}_2\text{SO}_4$ ) ( sp gr 1.84 )	10.0 g
Water ( $\text{H}_2\text{O}$ )	90.0 ml

There shall be no red stains or spots on the sample after the test, but the polished surface becoming dull may be permitted.

## 7. MARKING

**7.1** Scissors shall be legibly and indelibly marked with the manufacturer's name, initials or registered trade-mark and in addition with the words '*Stainless Steel*'.

**7.1.1** The scissors may also be marked with the ISI Certification Mark.

**NOTE** — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution ( Certification Marks ) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an

## IS : 4281 - 1967

Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

## 8. PACKING

8.1 Each pair of scissors shall be wrapped in moistureproof polyethylene bag and packed in cartons in a manner that coming into contact with each other is avoided.

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AMENDMENT NO. 1    JULY 1975  
TO  
IS:4281-1967 SPECIFICATION FOR SCISSORS,  
McINDOE'S, FOR PLASTIC SURGERY

Alterations

(Page 9, clauses 6.1 and 6.4.1) - Substitute the following for the existing clauses:

'6.4 Corrosion Resistance - The instrument shall satisfy the boiling and autoclaving test as mentioned in IS:7531-1975\*.'

(Page 9, foot-note) - Insert the following foot-note at the bottom of the page:

'\*Method for boiling and autoclaving test for corrosion resistance of stainless steel surgical instruments.'

(CPDC 11)

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Reprography Unit, ISI, New Delhi

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